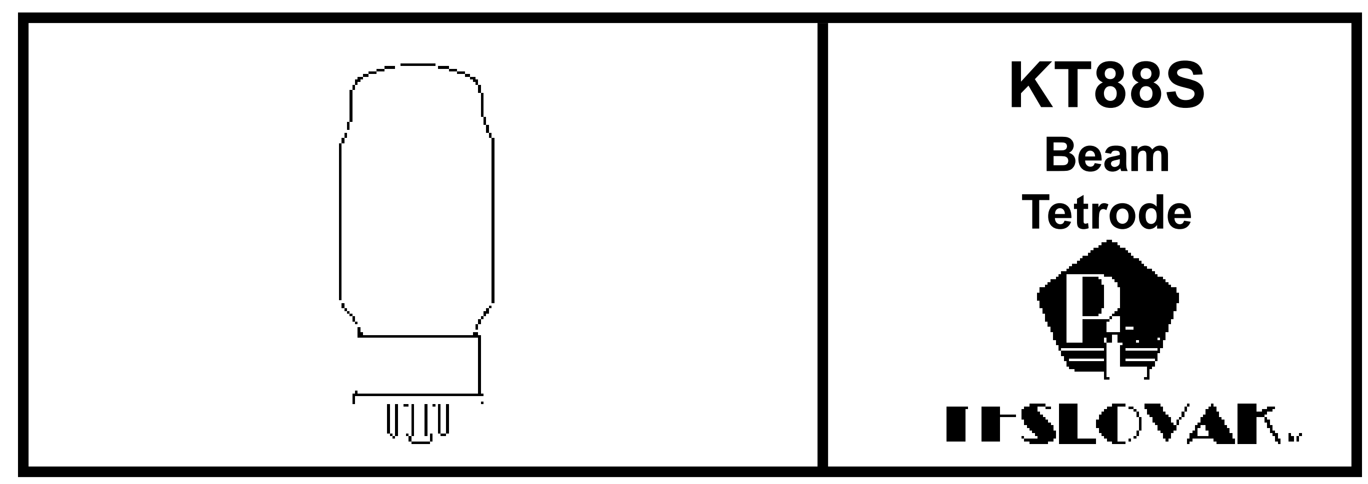


The KT88S has an absolute maximum anode dissipation rating of 50W and is designed for use in the output stage of an a.f. amplifier. Two tubes in Class AB1 give a continuous output of up to 120W. The KT88 is also suitable for use as a series tube in a stabilised power supply.

HEATER

V_h	6.3	V
I_h (approx.)	1.6	A

MAXIMUM RATINGS

	Absolute and Design Maximum	
V^a	800	V
V_{g2}	600	V
$V_{a,g2}$	600	V
$-V_{g1}$	200	V
p_a	50	W
p_{g2}	8	W
p_{a+g2}	59	W
I_k	230	mA
V_{h-k}	250	V
T_{bulb}	250	°C
R_{g1-k} (cathode bias)		
$p_{a+g2} \leq 40W$	470	kΩ
$p_{a+g2} > 40W$	270	kΩ
Rg1-k (fixed bias)		
$p_{a+g2} \leq 40W$	220	kΩ
$p_{a+g2} > 40W$	100	kΩ

(Revised 3/1/96)



P E N T A   L A B O R A T O R I E S
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ELECTRON TUBES FOR INDUSTRY



KT88S BEAM TETRODE

CAPACITANCES (measured on a cold unscreened tube)

Triode Connection

$C_{g1-a,g2}$	7.9	pF
$C_{g1-all\ less\ a,g2}$	9.3	pF
$C_{a,g2-all\ less\ g1}$	17	pF

Tetrode Connection

C_{g1-a}	1.2	pF
$C_{g1-all\ less\ a}$	16	pF
$C_{a-all\ less\ g1}$	12	pF

CHARACTERISTICS

Triode Connection

$V_{a,g2}$	250	V
I_{a+g2}	143	mA
$-V_{g1\ (approx.)}$	15	V
g_m	12	mmho
r_a	670	Ω
μ	8	

Tetrode Connection

V_a	250	V
V_{g2}	250	V
I_a	140	mA
$I_{g2\ (approx.)}$	3	mA
$-V_{g1\ (approx.)}$	15	V
g_m	11.5	mmho
r_a	12	kΩ
μ_{g1-g2}	8	

TYPICAL OPERATION
Push-Pull. Class Ab1, Cathode Bias, Tetrode Connection

$V_{a(b)}$	560	V
$V_{a(o)}$	521	V
V_{g2}	300	V
$I_{a(o)}$	2 x 64	mA
$I_{a\ (max\ signal)}$	2 x 73	mA
$I_{g2(o)}$	2 x 1.7	mA
$I_{g2\ (max\ signal)}$	2 x 9	mA
$R_{L(a-a)}$	9	kΩ
$*R_k$	2 x 460	Ω
$-V_{g1\ (approx.)}$	30	V
P_{out}	50	W
D_{tot}	3	%

**I.M.	11	%
$p_{a(o)}$	2 x 33	W
$p_{a\ (max\ signal)}$	2 x 12	W
$p_{g2\ (o)}$	2 x 0.5	W
$p_{g2\ (max\ signal)}$	2 x 2.7	W
$V_{(g1-g1)(ac)\ crest}$	60	V

* It is essential to use two seperate cathode bias resistors.
** Intermodulation distortion; measured using two input signals at 50 and 6000 Hz (ratio of amplitude 4:1)

Push-Pull. Class AB1, Fixed Bias, Tetrode Connection

$V_{a(b)}$	560	V
$V_{a(o)}$	552	V
V_{g2}	300	V
$I_{a(o)}$	2 x 60	mA
$I_{a\ (max\ signal)}$	2 x 145	mA
$I_{g2(o)}$	2 x 1.7	mA
$I_{g2\ (max\ signal)}$	2 x 15	mA
$R_{L(a-a)}$	4.5	kΩ
*- $_{Vg1\ (approx.)}$	34	V
P_{out}	100	W
D_{tot}	2.5	%
**I.M.	10	%
$p_{a(o)}$	2 x 33	W
$p_{a\ (max\ signal)}$	2 x 28	W
$p_{g2\ (o)}$	2 x 0.5	W
$p_{g2\ (max\ signal)}$	2 x 4.5	W
$V_{(g1-g1)(ac)\ crest}$	67	V

* It is essential to provide two seperately adjustable bias bias voltage sources, having a voltage adjustment range of +/- 25%
** Intermodulation distortion; measured using two input signals at 50 and 6000 Hz (ratio of amplitude 4:1)

Push-Pull. Class AB1, Cathode Bias, Ultra-Linear Connection (40% Tapping Points)

$V_{a,g2(b)}$	500	375	V
$V_{a,g2(o)}$	436	328	V
$I_{a+g2(o)}$	2 x 87	2 x 87	mA
$I_{a+g2(max\ signal)}$	2 x 99	2 x 96	mA
$R_{L\ (a-a)}$	6	5	kΩ
*R_k	2 x 600	2 x 400	Ω
$-V_{g1\ (approx.)}$	52	35	V

Parameter			
P_{out}	50	30	W
D_{tot}	1.5	1	%
**I.M.	4	3	%
$p_{a+g2(o)}$	2 x 38	2 x 28.5	W
$p_{a+g2(max\ signal)}$	2 x 17	2 x 16	W
$V_{(g1-g1)(ac)crest}$	104	71	V
Z_{out}	4.8	4.5	kΩ

* It is essential to use two seperate cathode bias resistors.
** Intermodulation distortion; measured using two input signals at 50 and 6000 Hz (ratio of amplitudes 4:1)

Push-Pull. Class AB1, Fixed Bias, Ultra-Linear Connection (40% Tapping Points)

Parameter			
$V_{a,g2(b)}$	560	460	V
$V_{a,g2(o)}$	553	453	V
$I_{a+g2(o)}$	2 x 50	2 x 50	mA
$I_{a+g2(max\ signal)}$	2 x 157	2 x 140	mA
$R_{L\ (a-a)}$	4.5	4	kΩ
*$-V_{g1\ (approx.)}$	75	59	V
P_{out}	100	70	W
D_{tot}	2	2	%
**I.M.	11	10	%
$p_{a+g2(o)}$	2 x 27.5	2 x 22.5	W
$p_{a+g2(max\ signal)}$	2 x 33	2 x 27	W
$V_{(g1-g1)(ac)crest}$	140	114	V
Z_{out}	7	6.5	kΩ

* It is essential to provide two seperately adjustable bias bias voltage sources, having a voltage adjustment range of +/- 25%
** Intermodulation distortion; measured using two input signals at 50 and 6000 Hz (ratio of amplitude 4:1)

Push-Pull. Class AB1, Cathode Bias, Triode Connection

Parameter			
$V_{a,g2(b)}$	400	485	V
$V_{a,g2(o)}$	349	422	V
$I_{a+g2(o)}$	2 x 76	2 x 94	mA
$I_{a+g2(max\ signal)}$	2 x 80	2 x 101	mA
$R_{L\ (a-a)}$	4	4	kΩ
$-V_{g1\ (approx.)}$	40	50	V
P_{out}	17	31	W
D_{tot}	1.5	1.5	%
*I.M.	5.6	5.6	%
$p_{a+g2(o)}$	2 x 26.5	2 x 40	W
$p_{a+g2(max\ signal)}$	2 x 19	2 x 27	W



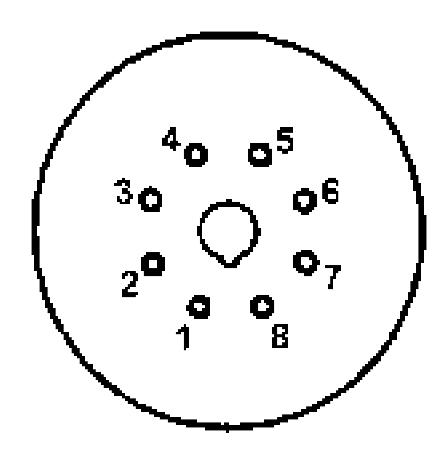
KT88S BEAM TETRODE

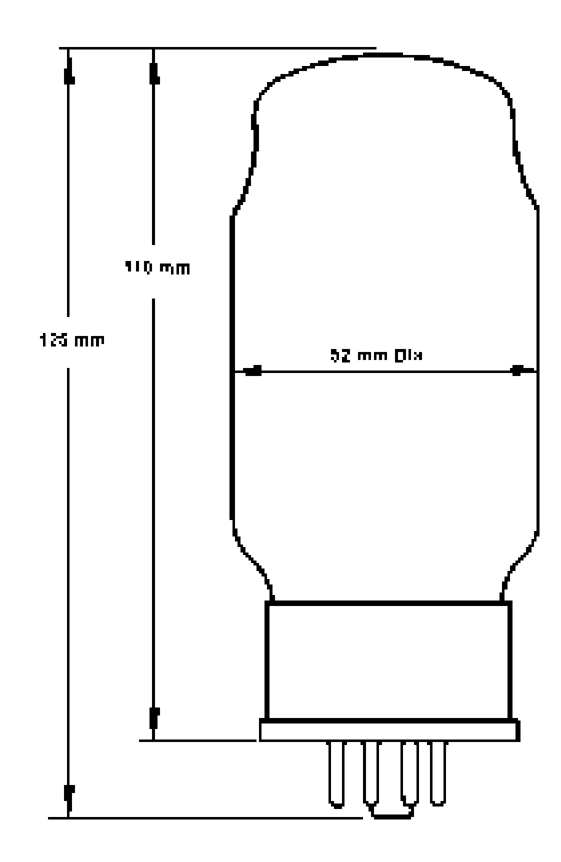
R_k	2 x 525	2 x 525	Ohms
$V_{(g1-g1)(ac)crest}$	78	114	V
Z_{out}	2	1.9	kΩ

* Intermodulation distortion; measured using two input signals at 50 and 6000 Hz (ratio of amplitude 4:1)

INSTALLATION

The tube may be mounted either vertically or horizontally.
When the tubes are mounted vertically, it is recommended that the centers of the tube sockets are not less than 4 inches apart and that pins 4 and 8 of each tube are in line.
When the tubes are mounted horizintally, it is recommended that the centers of the tube sockets are not less than 4 inches apart and that pins 4 and 8 of each tube are in the same vertical line.
One tube should not be mounted directly above another.
Free air circulation around the tube is desirable.





Base: Metal shell, wafer octal

Pin:
1. N.C.
2. h
3. a
4. g2
5. g1
6. N.C.
7. h
8. k,bp